

06/08/16

**ILRS Quality Control Standing Committee (QCSC)
To be renamed: ILRS Quality Control Board (QCB)
Telecon
June 6, 2016**

Participants: Erricos Pavlis, Toshi Otsubo, Matt Wilkinson, Tom Varghese, Carey Noll, Horst Mueller, and Mike Pearlman.

General

Carey has put the Quality Control Board webpage on the ILRS site; it can be accessed under Science and Networks; it will include QCSC notes, files, and other documentation.

Analysis Diagnostic Products

So far, Pilot Project solutions for 2005 – 2009 have been received from ASI, DGFI, GFZ (partial), JCET, and NSGF; still missing are those from GRGS, ESA, and the remainder from GFZ. BKG will not be able to participate at this time. Combination solutions have not been done yet. Erricos will get after the delinquents. The submitted solutions are on line; weekly combination solutions with L1 and L2 are in process. Current solutions are being done with ITRF 2008; ITRF 2014 coordinates will be used in the final data product, expected in the 3rd Q of 2016. The transition must wait the general adoption of the new post-seismic model (PSD). The IERS needs yet to adopt the new EOP series consistent with ITRF2014. Once the Pilot Project is demonstrated, the full data history on L1, L2, E1 and E2 will be reprocessed.

Current Diagnostic Tools

The “Systematic Error Estimation Pilot Project” has completed the first phase, with partial success (not all ACs participated). The goal of this pilot project is to harmonize the results amongst ACs and to eventually lead to a routine product that will issue on an accessible URL, one clear and useful report for each station that is based on inputs from all of the AC’s.

Erricos has posted several diagnostic tools on the ILRS website, accessible under either Network or Science; tools include Station Bias Histories, Network Performance based on LAGEOS, and JCET QC reports; See JCET Portal at:

http://geodesy.jcet.umbc.edu/ILRS_AWG_MONITORING/

For the “Systematics History from JCET” click on the button:

MONITORING SYSTEMATIC ERRORS AT ILRS STATIONS

for the “Systematic Error Pilot Project” results click on the button:

SYSTEMATIC ERROR ESTIMATION PILOT PROJECT

and for the network performance on LAGEOS and LAGEOS-2 click on the button:

NETWORK PERFORMANCE BASED ON LAGEOS and LAGEOS-2

The network performance data base spans the period 2010 to present only, but it can eventually be extended back to any date after 1983 if found useful. The JCET QC (daily and weekly) reports can be found at:

<ftp://cddis.gsfc.nasa.gov/pub/reports/slrjcet>

Everyone is urged to look at these tools and give feedback to Erricos.

Erricos continues to work on a web facility to display and compare quantities appearing on the QC reports from all groups participating in the report card generation (i.e. DGFI, HITO-Univ., JCET, MCC and SHAO), as well as historical reports from UT/CSR. The plan is to have this tool on line by the Potsdam Laser Workshop and organize a clinic session in it.

It might be a good idea to keep track of the accesses to these and other QC sites to know if they are being used and by whom. Erricos will alert the stations on the on-line tools that he is developing.

Horst and Erricos use the CODE results to vet problem data.

Toshi and Horst issue quick response diagnostics on incoming data to the stations; DGFI analysis is run twice per day with automatically triggered notice for 10 cm events; work continues on improving the analysis and diagnostic procedures. The Hit-U analysis is performed every 6 hours using a few months of data; error checking is at the 3 – 4 sigma level on the historical data; these QC reports are available at:

<http://geo.science.hit-u.ac.jp/slr/bias/>

Additional Tools and Modeling

Some groups are estimating range dependent biases using LEO satellites and LAGEOS. We should organize a formal system to examine range dependent biases, starting with LEO and LAGEOS where we have plenty of data and focusing on the passive satellites (Starlette, Stella, LARES, etc.) for simplification of the center of mass corrections.

ACTION Tom and Matt: Provide feedback on the helpfulness of the Toshi's charts, including comments on what could be added to improve the tool and how the charts should be annotated and commented so they might be made more useful to others.

ACTION Tom and Matt: Provide a list of parameters and displays from the analyses that would be useful diagnostic tools for the stations.

ACTION Tom: Check the Site logs for the NASA systems to see if the satellites center of mass parameters are correct and if all of the NASA systems are using the same system parameters.

ACTION Graham: Update the Center of Mass table with the latest stations parameters. (Matt is remind Graham)

We had some discussion on data discrimination: Should there be a minimum number of NP's for a pass to be acceptable? Should we weigh or exclude outlier NP's by the number of contained FR points?

Station Operations

Tosho has been estimating range and time biases for high satellites in an attempt to better isolate time and range biases, but the results are being hampered by poor pass coverage. We need to contact the stations to ask if they can better sample the GNSS passes. Some stations are taking only a few NP's per pass; one in particular is Changchun. Toshi will look at his a bit more closely.

ACTION Mike: Contact Changchun and Shanghai to ask for more coverage on the Lageos passes.

Although we do not get much low elevation (10 – 20 degrees) satellite data on LAGEOS, it could be a useful tool to better

ACTION Mike: Encourage selected stations to take more low elevation tracking on LARES and LAGEOS to better understand systems performance and to refine atmospheric refraction models.

We are obviously going to have to look at the trade-off between pass coverage and the number of satellites we are tracking.

Networks and Engineering

We need define tools/procedures/suggestions to help the stations detect system problems and to address issues when diagnostics are received from the QC process. This would be a good topic for the Laser Workshop Clinic. Maybe an Action item for the Networks and Engineering Standing Committee?

Maybe Ivan Prochazka would be willing to lead an activity on a rigorous component-by-component approach to trying to understand all sources of error in the SLR measurements.

Communication with the Stations

ACTION Carey: Determine the proper point of contact and interface for each of the stations. (Carey – Status?)

ACTION CB: A list of the Site Log updates and configuration change notifications has been provided by Erricos. Have all stations provided recent update?

Matt has established the on-line forum tool. He will vet it through the N&E SC and then the Board and the CB. Take a look.

We should decide how we want to discriminate among active stations, inactive stations and those who are making a “serious” effort to rebuild or upgrade.

Organization

Next Meeting: June 15, 2016 at 13:00 UTC.

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